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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/180,601	11/10/1998	TAKAHIRO OSHITA	1213/GEB667	6970

7590 05/13/2003

WENDEROTH LIND & PONACK
2033 K STREET NW SUITE 800
WASHINGTON, DC 20006

EXAMINER

DOROSHENK, ALEXA A

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 05/13/2003

28

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/180,601

Applicant(s)

OSHITA ET AL.

Examiner

Alexa A. Doroshenk

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-20 and 22-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-20 and 22-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. In view of the appeal brief filed on March 7, 2003, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 12-20 and 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama et al. (5,620,488) in view of Ohshita et al. (5,156,099).

With respect to claims 20 and 25, Hirayama et al. discloses a method of treating combustibles comprising:

circulating a fluidized medium (7 and 8) to circulate between a combustion (G) and heat recovery (S) regions in a fluidized-bed furnace (2);

generating combustible gas and non-combustible particles (col. 6, lines 49-52);
and

delivering the combustible gas and the non-combusted particles to a melt combustion furnace for receiving and for combusting the combustible gas and melting non-combustible ash of the non-combusted particles (col. 6, lines 49-52).

Hirayama et al. does not disclose a heat recovery surface in the heat recovery region (S).

Ohshita et al. teach a similar fluidized-bed apparatus and method comprising a combustion region (3) and a heat recovery region (4) with a heat recovery surface (5) for recovering heat to control a temperature of said bed (col. 6, lines 54-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the heat recovery surface teaching of Ohshita et al. in the invention of Hirayama et al. in order to achieve greater temperature control during operation of the apparatus, increase efficiency of the device and maintain the temperatures required for operation of the apparatus.

With respect to claims 24, 27 and 29, Hirayama et al. discloses an apparatus comprising:

a fluidized-bed furnace (2) including a bed having a combustion region (G) for gasifying combustibles so as to generate combustible gas and non-combustible particles (col. 6, lines 49-52), and having a heat recovery region (S), further including a fluidized medium (7 and 8) operable to circulate between the combustion (G) and heat recovery (S) regions; and

a melt combustion furnace for receiving the combustible gas and the non-combusted particles and for combusting the combustible gas and melting non-combustible ash of the non-combusted particles (col. 6, lines 49-52).

Hirayama et al. does not disclose a heat recovery surface in the heat recovery region (S).

Ohshita et al. teach a similar fluidized-bed apparatus comprising a combustion region (3) and a heat recovery region (4) with a heat recovery surface (5) for recovering heat to control a temperature of said bed (col. 6, lines 54-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the heat recovery surface teaching of Ohshita et al. in the apparatus of Hirayama et al. in order to achieve greater temperature control during operation of the apparatus, increase efficiency of the device and maintain the temperatures required for operation of the apparatus.

With respect to claims 12, 16 and 23, Hirayama et al. further disclose the method and apparatus of a first and second fluidizing gas (7 and 8) which are supplied as an upward flow through the furnace so that a moving bed (9) descends and the combustibles are gasified (G) while circulating together (see fig. 1 and 2). Hirayama et al. also disclose wherein the furnace is circular in cross-section with the heat recovery region on the periphery and the combustion region in the center (col. 5, line 62- col. 6, line 18) but do not disclose a partition wall.

Ohshita et al. also disclose a similar method and apparatus wherein a first and second fluidizing gas (13 and 14) which are supplied as an upward flow through the

Art Unit: 1764

furnace so that a moving bed descends and the combustibles are gasified while circulating together (col. 5, line 56- col. 6, line 3). Ohshita et al. additionally teach a partition wall (18) which separates the combustion and recovery regions to define a heat recovery region and assist in controlling the recovery of heat (col. 6, line 34- col. 7, line 15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide such a partition in the fluidized bed in order to define the two required regions as well as to further control the heat recovery and ensure the desired circulation paths disclosed by both references.

With respect to claims 13 and 17, Hirayama et al. disclose wherein the temperature of the furnace is regulated (col. 10, lines 43-46).

With respect to claims 14, 15, 18 and 19, Hirayama et al. disclose wherein temperature is controlled in the moving bed through the combustion and heat recovery regions (col. 10, lines 36-46). With respect to the limitations of “main temperature control” and “auxiliary temperature control” of the instant claims, the mere fact that a given structure is integral does not preclude its consisting of various elements since the same operation would be achieved.

With respect to claim 22, Hirayama et al. further discloses a fluidized bed furnace (1) with an air diffusion device (7 and 8) at the bottom of the furnace to supply fluidizing gases which are supplied as an upward flow through the furnace so that a moving bed (9) descends and the combustibles are gasified (G) while circulating together (see fig. 1 and 2) but do not disclose a partition wall.

Ohshita et al. also disclose a similar method and apparatus wherein a first and second fluidizing gas (13 and 14) which are supplied as an upward flow through the furnace so that a moving bed descends and the combustibles are gasified while circulating together (col. 5, line 56- col. 6, line 3). Ohshita et al. additionally teach a partition wall (18) which separates the combustion and recovery regions to define a heat recovery region and assist in controlling the recovery of heat (col. 6, line 34- col. 7, line 15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide such a partition in the fluidized bed in order to define the two required regions as well as to further control the heat recovery and ensure the desired circulation paths disclosed by both references.

With respect to claims 26, 28 and 30, Hirayama et al. disclose wherein fluidized-bed furnace is maintained at a temperature in the range of 450°C to 800°C (col. 10, lines 43-46) and the melt combustion furnace is operable at 1300°C (col. 5, lines 53-55).

Response to Arguments

4. Applicant's arguments with respect to claims 12-20 and 22-30 have been considered but are moot in view of the new ground(s) of rejection.

The examiner notes that applicant's arguments presented in the Brief filed March 7, 2003 are mainly directed toward the fact that the gases produced in the Ohshita et al. reference are exhaust gases and not combustible.

The examiner agrees with applicant and has presented a new grounds of rejection, above.

Art Unit: 1764

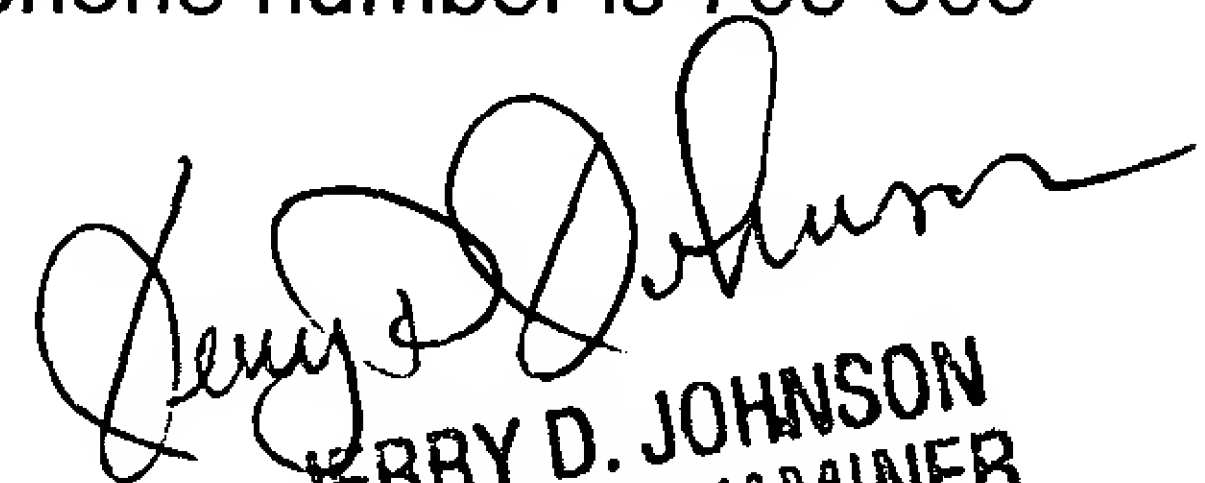
Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 703-305-0074. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

AAD
AAD
May 12, 2003


JERRY D. JOHNSON
PRIMARY EXAMINER
GROUP 1100